FIRE FACT 060 – FIRE ALARM SYSTEM

A fire alarm system is a specialized system and requires knowledge and experience to properly design, install, inspect, and maintain. Only those individuals properly trained, educated and experienced shall work on these systems.

New Systems or Modifications

Before fire alarm systems in certain facilities can be installed or modified, plans must be submitted to the KSFMO for approval. These facilities include:

- Educational: USD's, private schools, preschools, daycare and childcare centers, and Board of Regents universities.
- Healthcare: hospitals, adult care facilities, nursing homes, ambulatory care centers, and residential board and care facilities.
- Correction and detention

The submitted plans shall comply with standards set forth by the KSFMO and shall include a copy of equipment cut sheets and floor diagrams. These should show the placement of detectors, fire alarm control panels, pull stations, annunciation devices, and other components. Specification sheets and any other information relevant to the fire alarm or smoke detection system should also be included.

The plans must be stamped by a physical engineer or a Kansas-licensed engineer with knowledge in fire alarm systems.

The design, installation, modification, inspection, and maintenance of fire alarm systems shall comply with all requirements of the applicable nationally promulgated codes and standards, regardless of whether or not the KSFMO required a plan or whether or not plan approval was given by any jurisdiction, including the KSFM.

Existing Systems

Existing systems shall be maintained according to the applicable codes and standards. The edition of the standard may vary by occupancy type as shown below:

Federal Healthcare: NFPA 72, 1999
All other occupancies: NFPA 72, 2007

It is extremely important for facility owners and operators to be knowledgable in their specific fire alarm system as well as ensuring they are utilizing good qualified individuals to work on and maintain the system. At a minimum, the facility owner and operator must be able to recognize when the system is impaired, how to perform a basic reset, and when to call for service.

Existing Systems – Cont.

Here is an abbreviated list of fire alarm system requirements. You will need to obtain a copy of NFPA 72 (appropriate edition) to see the complete list of inspection, testing, and maintenance requirements.

Weekly
Visual inspection of panel for trouble signal
All staff should be trained to recognize alarm trouble signals as part of a continual monitoring

Quarterly
Visal inspection of all sprinkler devices connected: water flow and tamper valve switches

Semiannual
Test of sprinkler waterflow switches *
Test of sprinkler valve tamper switches *
Visual inspection of lead-acid battery
Test batteries

Annual
Important: The annual inspection documentation must meet the minimum documentation requirements as outlined in NFPA 72 (4 page form).
Test and visual inspection of panel
Test panel battery charger
Battery discharge test
Test and visual inspection of horns, strobes, chimes, bells, etc
Test and visual inspection of smoke, heat, and duct detectors
Test and visual inspection of electromechanical releasing devices
Test and visual inspection of voice evacuation equipment

Other
Replace panel batteries every 5 yrs or per manufacturer recommendations
Sensitivity testing of smoke detectors **
Recommend detector replacement after 10 yrs

* This may already be done as part of the inspection, testing, and maintenance requirements of the sprinkler system
** See NFPA code for timeframe requirements

Kansas State Fire Marshal – Fire Prevention Division

Inspection and Testing

Date	Time

Service Organization	**Property Name**
Name	Name
Address	Address
Representative	Owner Contact
License No	Telephone
Telephone	

Monitoring Entity	**Approving Agency**
Contact	Contact
Telephone	Telephone
Monitoring Acct No.	

Type Transmission		**Service**	
☐ McCulloh	☐ Reverse Priority	☐ Weekly	☐ Semiannual
☐ Multiplex	☐ RF	☐ Monthly	☐ Annual
☐ Digital	☐ Other:	☐ Quarterly	☐ Other:
Specify:		Specify:	

Conrol Unit Manufacturer	Model No.
Circuit styles	
Number of circuits	
Software Rev	
Last date system service	
Last date system revised	

Alarm- Initiating Devices and Circuit Information

Quantity	Circuit Style	
		Manual Fire Alarm Box
		Ion Detector
		Photo Detector
		Duct Detector
		Heat Detector
		Waterflow Switches
		Supervisory Switches
		Other:

Alarm Notification Appliances and Circuit Information

Quantity	Circuit Style	
		Bells
		Horns
		Chimes
		Strobes
		Speakers
		Other:
No. of alarm notification appliance circuits		
Are circuits monitored for integrity?	Yes No	

Supervisory Signal-Inititating Devices and Circuit Information

Quantity	Circuit Style	
		Building Temp
		Site Water Temp
		Site Water Level
		Fire Pump Power
		Fire Pump Running
		Fire Pump Auto Position
		Fire Pump or Pump Comtroller Trouble
		Fire Pump Running
		Generator in Auto Position
		Generator in Controller Position
		Switch Transfer
		Generator Engine Running
		Other:

Signaling Line Circuits

Quantity and style (see NFPA 72. Table 3-6) of signaling circuits connected to system		
Quantity:		Style:

System Power Supplies

a. Primary (Main)	Nominal Voltage	Amps:
Overcurrent Portection	Type	Amps:
Location of Primary Supply Panelboard		
Disconnecting Means Location		
b. Secondary (Standby)		
Storage Battery:	Amp Hr Rating	
Calculated capacity to operate system, in hours		
Engine driven generator dedicated to fire alarm system		
Location of fuel storage		

Battery Type

☐ Dry Cell ☐ Nickel-Cadmium ☐ Sealed lead-acid ☐ Lead-acid ☐ Other:

c. Emergency or standby system used as a backup to primary power supply, instead of using secondary power supply	
	Emergency system described in NFPA 70
	Legally required standby described in NFPA 70
	Optional standby system described in NFPA 70

Prior to Any Testing

Notifications are made	**Who**	**Time**
Monitoring Entity ☐ Yes ☐ No		
Building Occupants ☐ Yes ☐ No		
Building Management ☐ Yes ☐ No		
Other ☐ Yes ☐ No		
AHJ (notified of any impairments) ☐ Yes ☐ No		

System Tests and Inspections

Type	**Comments**
Control Unit ☐ Visible ☐ Functional	
Interface Eq. ☐ Visible ☐ Functional	
Lamps/LED ☐ Visible ☐ Functional	
Fuses ☐ Visible ☐ Functional	
Primary Power Supply ☐ Visible ☐ Functional	
Trouble Signals ☐ Visible ☐ Functional	
Disconnect Switch ☐ Visible ☐ Functional	
Groud-Fault Monitoring ☐ Visible ☐ Functional	
Secondary Power	
Battery Condition ☐ Visible ☐ Functional	
Load Voltage ☐ Functional	
Discharge Test ☐ Functional	
Charger Test ☐ Functional	
Specific Gravity ☐ Functional	
Transient Suppressors ☐ Visible	
Remote Annunciators ☐ Visible ☐ Functional	
Notification Appliances	
Audible ☐ Visible ☐ Functional	
Visual ☐ Visible ☐ Functional	
Speakers ☐ Visible ☐ Functional	
Voice Clarity ☐ Functional	

Initiating and Supervisory Device Test and Inspections

Loc. & S/N	**Device Type**	**Visual**	**Functional**	**Factory Setting**	**Meas. Setting**	**Pass**	**Fail**
		☐	☐			☐	☐
		☐	☐			☐	☐
		☐	☐			☐	☐
		☐	☐			☐	☐

Comments:

Emergency Communication Equipment			**Comments**
Phone Set	☐ Visual	☐ Functional	
Phone Jacks	☐ Visual	☐ Functional	
Off-Hook Indicator	☐ Visual	☐ Functional	
Amplifier(s)	☐ Visual	☐ Functional	
Tone Generator(s)	☐ Visual	☐ Functional	
Call-in Signal	☐ Visual	☐ Functional	
System Performance	☐ Visual	☐ Functional	

Interface Equipment			
Specify:	☐ Visual	☐ Device Operation	☐ Simulated Operation
Specify:	☐ Visual	☐ Device Operation	☐ Simulated Operation
Specify:	☐ Visual	☐ Device Operation	☐ Simulated Operation
Special Hazard Systems			
Specify:	☐ Visual	☐ Device Operation	☐ Simulated Operation
Specify:	☐ Visual	☐ Device Operation	☐ Simulated Operation
Specify:	☐ Visual	☐ Device Operation	☐ Simulated Operation

Special Procedures:

Comments:

Supervising Station Monitoring		**Time**	**Comments**
Alarm Signal	☐ Yes ☐ No		
Alarm Restoration	☐ Yes ☐ No		
Trouble Signal	☐ Yes ☐ No		
Supervisory Signal	☐ Yes ☐ No		
Supervisory Restoration	☐ Yes ☐ No		

Notification that Testing is Complete		**Who**	**Time**
Building Management	☐ Yes ☐ No		
Monitoring Agency	☐ Yes ☐ No		
Building Occupants	☐ Yes ☐ No		
Other	☐ Yes ☐ No		

The following did not operate correctly:

System restored Date: Time:

This testing was performed in accordance with applicable NFPA standards

Name of Inspector	
Signature	
Name of owner or representative	
Date	Time
Signature	